UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,725	05/08/2001	Bernard Yeh	042390.P11508	3637

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Crystal D. Sayles
c/o BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025

EXAMINER
BENGZON, GREG C

ART UNIT	PAPER NUMBER
2144	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/851,725	YEH ET AL.
	Examiner	**Art Unit**	
	Greg Bengzon	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)	4)☐ Interview Summary (PTO-413)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	5)☐ Notice of Informal Patent Application (PTO-152)
Paper No(s)/Mail Date _____ .	6)☐ Other: _____ .

DETAILED ACTION

This application has been examined. Claims 1-26 are pending .

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/18/2005 has been entered.

Priority

No claim priority has been made in this application.

The effective filing date for the subject matter defined in the pending claims in this application is 5/8/2001.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 9-14,17-20 (as amended) are rejected under 35 U.S.C. 103(e) as

being unpatentable over Fletcher et al. (US Patent 6269401) hereinafter referred to as

Fletcher, in view of Yu (US Patent 5636371).

With respect to Claims 1-6, 9-14,17-20, Fletcher substantially discloses the

features and limitations as described by the Applicant.

With respect to Claims 1, 3, 9, 11, and 17 Fletcher discloses the method, set of

instructions, and system for testing a computer system to be operated in a multi-

computer environment, comprising: executing server code at a computer system under

test; executing client code at said computer system under test; and calculating

performance data for said computer system under test. Furthermore, Fletcher discloses

the method, set of instructions, and system for testing a computer system to be

operated in a multi-computer environment, comprising: executing server code at a

computer system under test according to a multicomputer communication protocol;

executing client code on said computer system under test according to said

multicomputer communication protocol; and calculating performance data for said

computer system under test operating as one of a server and a client. (See Fletcher

Column 3 Lines 30-60, Figure 1 Column 5 Lines 15-50, Figure 2 Column 5 Lines 55-67).

However, Fletcher does not disclose (re. Claims 1, 3, 9, 11, 17) a single

computer system emulating a server and a client, said computer executing server code

and also executing client code.

Yu discloses (re. Claims 1, 3, 9, 11, 17) of a virtual network mechanism that

allows a single host system to emulate multiple server and client processes, allowing

data to be passed between said processes, and executing server and client code in the

same said host system. (Column 4 Lines 1-25, Column 5 Lines 1-25, Column 8 Lines

1-25)

Fletcher and Yu are analogous art because they teach concepts and practices

regarding capture of data between server and client processes and execution of said

server and client processes. At the time of the invention it would have been obvious to

a person of ordinary skill in the art to combine the teachings of Yu into Fletcher , such

that the Fletcher is able to 1) emulate server and client processes in the same single

host computer system and 2) execute both server code and client code in the said host

computer. The suggested motivation for doing so would have been, as Yu suggests

(Yu - Abstract), to eliminate the need to 1) specify additional protocol stacks and 2)

provide additional communication hardware facilities for the handling multiple instances of application programs.

With respect to Claims 2 and 10, Fletcher discloses the method and set of instructions of Claims 1 and 9 for tracking an execution time for each of said threads by a processor in said computer system under test; and tracking a number of transactions completed between the execution of server code and the execution of client code wherein said performance data is based on said number of transactions completed over a period of time. (See Fletcher Column 20, Lines 30-60, Column 23 Lines 45-65, Column 24 Lines 1-67).

With respect to Claims 4,12 and 18, Fletcher discloses the method, set of instructions and system of Claims 3,11, and 17 wherein said server code and client code includes a number of threads, the method further comprising: tracking an execution time for each of said threads by a processor in said computer system under test. (See Fletcher Column 20, Lines 30-60, Column 23 Lines 45-65, Column 24 Lines 1-67).

With respect to Claims 5,13, and 19, Fletcher discloses the method, set of instructions and system of Claims 4, 12, and 18 wherein said multicomputer communication protocol defines transactions between said server and said client, the method further comprising: tracking a number of transactions completed between the

execution of server code and the execution of client code. (See Fletcher Column 20, Lines 30-60, Column 23 Lines 45-65, Column 24 Lines 1-67).

With respect to Claims 6,14 and 20, Fletcher discloses the method, set of instructions and system of Claims 5, 13, and 19 wherein said performance data is based on said number of transactions completed over a period of time. (See Fletcher Column 24, Lines 5-18, Lines 30-50)

Claims 7,15, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al. (US Patent 6269401) hereinafter referred to as Fletcher, in view of Yu (US Patent 5636371), as applied to Claims 1-6, 9-14,17-20 above, further in view of Cota-Robles (US PG Publication 2001/0056456).

With respect to Claims 7,15, and 21, the combined teachings of Fletcher and Yu substantially disclose the method, set of instructions and system of Claims 6, 14, and 20 wherein said performance data is based on said number of transaction completed over said period of time. (See Fletcher Column 24, Lines 5-18, Lines 30-50, Column 25 Lines 1-45)

However the combination of Fletcher and Yu does not disclose (re. Claims 7,15, 21) any teachings regarding a scaling factor and said performance data being modified by a scaling factor.

Cota-Robles discloses (re. Claims 7,15, 21) a scaling factor that is calculated

and applied as a characteristic or 'execution state indicator' or 'dynamic priority

indicator' of a thread process. The scaling factor can be calculated as a positive scaling

factor or a negative scaling factor, depending on the performance data measurements

taken for a particular thread. (Page 2 Paragraph 13,Page 3 Paragraph 33, Page 5

Paragraphs 54-56).

Fletcher, Yu and Cota-Robles are analogous art because they are presenting

solutions for measuring thread execution data and using the performance data for

calculations that describe characteristics of thread execution dynamics in a computer

system environment. At the time of the invention it would have been obvious to a person

of ordinary skill in the art to apply the concept of a scaling factor taught by Cota-Robles

and use the scaling factor to modify the performance data measured by the combination

of Fletcher and Yu . The suggested motivation for doing so would have been, as

suggested by Cota-Robles (Page 2 Paragraph 23), to overcome the limitations of single

context processors which execute instructions from one thread at a time, wherein

priority-based scheduling algorithms unambiguously determine when and under what

circumstances different threads access the processor. Furthermore it would have been

obvious combine in order to present a logical means for comparing performance testing

results with relative atomicity, consistency, and isolation. Furthermore the scaling factor

allows the test conditions to be adjusted accordingly in order to simulate or predict

performance under other testing scenarios.

Claims 8,16, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Fletcher et al. (US Patent 6269401) hereinafter referred to as Fletcher, in view of

Yu (US Patent 5636371), as applied to Claims 1-6, 9-14,17-20 above, further in view of

Cota-Robles (US PG Publication 2001/0056456).

With respect to Claims 8,16, and 22, the combined teachings of Fletcher and Yu

substantially disclose the method, set of instructions and system of Claims 7, 15, and 21

as described the rejection for Claims 7, 15, and 21. Fletcher discloses measuring the

total execution time for both client and server threads (Column 7 Lines 5-67, Column 8

Lines 25-30) and measuring one of an execution time for said server threads and an

execution time for said client threads (Column 20 Line 30-60).

However the combination of Fletcher and Yu does not disclose (re. Claims 8,16,

and 22) any teachings regarding a scaling factor, where said scaling factor is a total

execution time for both client and server threads divided by one of an execution time for

said server threads and an execution time for said client threads.

Cota-Robles discloses (re. Claims 8,16, and 22) a scaling factor that is calculated

and applied as a characteristic or 'execution state indicator' or 'dynamic priority

indicator' of a thread process. The scaling factor can be calculated as a positive scaling

factor or a negative scaling factor, depending on the performance data measurements

taken for a particular thread. (Page 2 Paragraph 13,Page 3 Paragraph 33, Page 5

Paragraphs 54-56). Cota-Robles teaches of a scaling function having linear

dependencies wherein said scaling function is expressed as a ratio between a sum of

the total occurrence for a unit of measurement data and a singular occurrence of a unit

of measurement data. (Page 5 Paragraphs 49-50)

Fletcher, Yu and Cota-Robles are analogous art because they are presenting

solutions for measuring thread execution data and using the performance data for

calculations that describe characteristics of thread execution dynamics in a computer

system environment. At the time of the invention it would have been obvious to a person

of ordinary skill in the art to apply the concept of a scaling factor as taught by Cota-

Robles, determine a suitable scaling function, calculate the scaling factor and use the

scaling factor to modify the performance data measured by the combination of Fletcher

and Yu . The scaling function can be expressed as a ratio between the total execution

time for both client and server threads divided by one of an execution time for said

server threads and an execution time for said client threads.

The suggested motivation for doing so would have been, as suggested by Cota-

Robles (Page 2 Paragraph 23) , to overcome the limitations of single context

processors which execute instructions from one thread at a time, wherein priority-based

scheduling algorithms unambiguously determine when and under what circumstances

different threads access the processor. Furthermore the combination would have been

obvious in order to present a logical means for comparing performance testing results

with relative atomicity, consistency, and isolation. Furthermore the scaling factor allows

the test conditions to be adjusted accordingly in order to simulate or predict

performance under other testing scenarios.

Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Fletcher et al. (US Patent 6269401) hereinafter referred to as Fletcher, in view of Yu

(US Patent 5636371), as applied to Claims 1-6, 9-14,17-20 above, further in view of

Cota-Robles (US PG Publication 2001/0056456).

With respect to Claim 23 and 25, the combination of Fletcher and Yu discloses

the methods of Claim 1 and set of instructions for Claim 9, wherein said server code

comprises a number of server threads, and said client code comprises a number of

client threads. (Column 23 Lines 30-40)

However the combination of Fletcher and Yu does not disclose (re. Claims 23,

25) of executing scheduler code, said scheduler code comprising a number of

scheduler threads, said scheduler threads for coordinating communications of data

between said client threads and said server threads.

With respect to Claims 24 and 26, the combination of Fletcher and Yu does not

disclose the methods of Claim 23 and set of instructions for Claim 25, wherein

executing said scheduler code includes interfacing with a queue to store data packets to be transferred to a client thread or a server thread.

Cota-Robles discloses (re. Claims 23, 25) of a simultaneous multi-threaded architecture that combines operating system (OS) priority information with thread execution heuristics to provide dynamic priorities for selecting thread instructions for processing. The OS can schedule multiple threads belonging to different applications such as server or client applications onto an SMT processor concurrently. (Page 2 Paragraph 23-27). Cota-Robles discloses (re. Claims 24, 26) the SMT processor using instruction queues for storing data according to which execution unit is necessary to implement the thread. (Page 3 Paragraph 35-37)

Fletcher, Yu and Cota-Robles are analogous art because they are presenting solutions for measuring thread execution data and using the performance data for calculations that describe characteristics of thread execution dynamics in a computer system environment. At the time of the invention it would have been obvious to a person of ordinary skill in the art to implement a thread scheduler as taught by Cota-Robles into the combination of Fletcher and Yu , such that the scheduler is able to 1) recognize and reassign the priorities of the server threads and the client threads for maximum efficiency and throughput and 2) transfer the necessary data to the server or client thread in order to complete execution of the thread. The suggested motivation for doing so would have been, as Cota-Robles suggests (Page 2 Paragraph 23), to

overcome the limitation of single context processors which execute instructions from

one thread at a time.

Response to Arguments

Applicant's arguments filed 08/18/2005 have been fully considered but are not

persuasive.

The Applicant presents the following argument(s) [*in italics*]:

With regards to independent claims 1, 3, 9, 11, and 17, the Examiner.... has

acknowledged that Fletcher does not teach or suggest "a single computer system

emulating a server and a client, said [single] computer executing server code and also

executing client code." However, the Examiner has taken the position, unsupported by

the references of record, that Fletcher can be modified to include such limitations

without affecting the performance of the Fletcher system. There is no teaching or

suggestion of such a modification in Fletcher. In fact Fletcher teaches away from a

single computer system emulating a server and a client because Fletcher teaches

monitoring communication performance in a communication network comprising

communication systems communicatively coupled to each other with communication

equipment. ... Thus, contrary to the present invention, Fletcher uses separate computer

systems for the client and the server.....

The Examiner respectfully disagrees with the Applicant. In response to

applicant's argument that there is no suggestion to combine the references, the

examiner recognizes that obviousness can only be established by combining or

modifying the teachings of the prior art to produce the claimed invention where there is

some teaching, suggestion, or motivation to do so found either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art.

See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958

F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In Column 2 Lines 25-30 Fletcher

disclosed that it is not possible to quickly pinpoint a problem as either a network

problem or a system problem, and cites an example (Fletcher – Column 25 Lines 40-45)

wherein, in resolving a response time issue, the network manager is required to

determine if there is a problem with the communication line or with router(s) along that

line. It would have been obvious to a person of ordinary skill in the art that in order to

create an effective monitoring environment all unnecessary factors that may affect the

monitored environment should be eliminated. Thus, Fletcher would have been

motivated to look for disclosures regarding environments that permit client and server

operations in a single workstation, such as disclosed by Yu. In regards to affecting the

performance of the system described by Fletcher, the Examiner notes that Fletcher

does not indicate any limitation on the type of host computer and operating system that

is required to perform monitoring operations. Furthermore Yu provides additional

motivation for combination in disclosing that said system enhances overall system

performance and eliminates the need for additional resources. (Yu – Column 4 Lines 1-

5)

The Applicant presents the following argument(s) [*in italics*]:

Yu, on the other hand, does not appear to teach this feature as well. Instead,

according to the sections of Yu cited by the Examiner, Yu teaches that server processes

are run on a remote system.

The Examiner respectfully disagrees with the Applicant. Yu disclosed that there

is no requirement that the emulated systems be located in a physically separate

computer system. (Yu – Column 5 Lines 15-20) Thus Yu disclosed a single computer

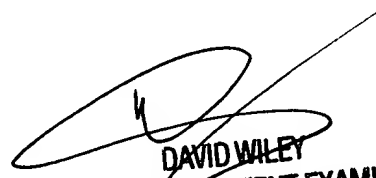system emulating a server and a client.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Bengzon whose telephone number is (571) 272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/GCB

DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100